

Claims

1. A nucleic acid sensor molecule comprising an enzymatic nucleic acid component and one or more sensor components, wherein, in response to an interaction of a single stranded RNA (ssRNA) having a single nucleotide polymorphism (SNP) with the nucleic acid sensor molecule in a system, the enzymatic nucleic acid component catalyzes a chemical reaction resulting in a detectable response.
2. A nucleic acid sensor molecule comprising an enzymatic nucleic acid component and one or more sensor components, wherein, in response to an interaction of a single stranded DNA (ssDNA) having a SNP with the nucleic acid sensor molecule in a system, the enzymatic nucleic acid component catalyzes a chemical reaction resulting in a detectable response.
3. A nucleic acid sensor molecule comprising an enzymatic nucleic acid component and one or more sensor components, wherein, in response to an interaction of a single stranded RNA (ssRNA) with the nucleic acid sensor molecule in a system, the enzymatic nucleic acid component catalyzes a chemical reaction resulting in cleavage of a predetermined RNA molecule associated with a disease.
4. A nucleic acid sensor molecule comprising an enzymatic nucleic acid component and one or more sensor components, wherein, in response to an interaction of a single stranded DNA (ssDNA) with the nucleic acid sensor molecule in a system, the enzymatic nucleic acid component catalyzes a chemical reaction resulting in cleavage of a predetermined RNA molecule associated with a disease.
5. A nucleic acid sensor molecule comprising an enzymatic nucleic acid component and one or more sensor components, wherein, in response to an interaction of a single stranded RNA (ssRNA) having a SNP with the nucleic acid sensor molecule in a system, the enzymatic nucleic acid component catalyzes a chemical reaction resulting in ligation of a predetermined RNA molecule to another predetermined RNA molecule.

6. A nucleic acid sensor molecule comprising an enzymatic nucleic acid component and one or more sensor components, wherein, in response to an interaction of a single stranded DNA (ssDNA) having a SNP with the nucleic acid sensor molecule in a system, the enzymatic nucleic acid component catalyzes a chemical reaction resulting in ligation of a predetermined RNA molecule to another predetermined RNA molecule.
7. A method comprising:
- a. contacting the nucleic acid sensor molecule of claim 1 with a system comprising at least one ssRNA having a SNP under conditions suitable for the enzymatic nucleic acid component of the nucleic acid sensor molecule to catalyzes a chemical reaction resulting in a detectable response; and
  - b. assaying for the chemical reaction resulting in a detectable response.
8. A method comprising:
- a. contacting the nucleic acid sensor molecule of claim 2 with a system comprising at least one ssDNA having a SNP under conditions suitable for the enzymatic nucleic acid component of the nucleic acid sensor molecule to catalyzes a chemical reaction resulting in a detectable response; and
  - b. assaying for the chemical reaction resulting in a detectable response.
9. The nucleic acid sensor molecule of any of claim 1 or claim 2, wherein said chemical reaction is cleavage of a phosphodiester internucleotide linkage.
10. The nucleic acid sensor molecule of any of claim 1 or claim 2, wherein said chemical reaction is ligation of a predetermined nucleic acid molecule to the nucleic acid sensor molecule.
11. The nucleic acid sensor molecule of claim 1 or claim 2, wherein said chemical reaction is ligation of a predetermined nucleic acid molecule to another predetermined nucleic acid molecule.